REMARKS

Claims 1-48 are pending in the present application. The specification and abstract have been objected to. Claims 1-3, 6-13, 16-22, 24, 27-29, 33-37 and 41-42 stand rejected for obviousness over U.S. Patent No. 5,842,118 to Wood, Jr., in view of U.S. Patent No. 5,649,296 to MacLellan et al. Claims 4-5, 14-15, 23, 26, 30-32, and 38-40 stand rejected for obviousness over Wood in view of MacLellan and further in view of U.S. Patent No. 6,313,717 to Freeze et al.

Applicants respectfully traverse the rejections and urge allowance of the present application.

The Office Action identifies limitations of the prior art which allegedly correspond to limitations of claim 1 in support of the 103 rejection. As correctly stated on page 3 of the Office Action, Wood does not disclose a communication station remotely located with respect to the housing. Thereafter, it is stated that MacLellan discloses a communication station remotely located with respect to the housing to extend the range of communication with a tag or transponder and with reference to interrogator 103 of Fig. 1. In particular, the Office Action identifies interrogator 103 as allegedly corresponding to the claimed communication station remotely located with respect to the housing. Wood and MacLellan taken alone or in combination fail to disclose or suggest limitations of claim 1 and Applicants disagree with the obviousness rejection of claim 1.

Claim 1 recites a housing including *circuitry configured to generate a forward link communication signal and a communication station remotely located with respect to the housing and configured to radiate a forward link wireless signal corresponding to the*

forward link communication signal. Referring to MacLellan, an interrogator 103 as set forth in column 3, lines 32-42 receives an information signal, properly formats a downlink message and sends a modulated signal via antenna 204 using transmitter 203 of interrogator 103. Accordingly, interrogator 103 provides a common assembly for generation of a downlink message and radiation of the downlink message using transmitter antenna 204. The interrogator of MacLellan providing the generation and transmission of the downlink signal within a common assembly fails to disclose or suggest a housing configured to generate a forward link communication signal and a communication station remotely located with respect to the housing and configured to radiate a forward link wireless signal corresponding to the forward link communication signal as defined in claim 1. In addition, the interrogator 26 of Wood providing the generation and communication of signals in a common device fails to disclose or suggest the housing and the remotely located communication station of claim 1. Claim 1 recites limitations not shown or suggested in the prior art of record and claim 1 is allowable for at least this reason.

Referring to MPEP §2143.01 (8th ed.), there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine reference teachings. The mere fact that references *can* be combined or modified does not render the resultant combination obvious *unless the prior art also suggests the desirability of the combination.* MPEP §2143.01 *citing In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Obviousness cannot be established by a combination of references unless there is some motivation in the art to support the combination. *See ACH Hospital Systems, Inc. v. Montifiore Hospital*, 732

F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). The motivation for forming the combination must be something other than hindsight reconstruction based on using Applicant's invention as a road map for such a combination. *See, e.g., Interconnect Planning Corp. v. Feil*, 227 USPQ 543, 551 (Fed. Cir. 1985); *In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990).

It is stated on pages 3 and 4 of the Office Action that MacLellan discloses a communication station remotely located with respect to a housing to extend the range of communication with a tag or transponder. MacLellan provides no such extension of communications range inasmuch as the downlink signal is generated and transmitted within the same device (i.e., interrogator 103). No extension of range is provided and any alleged motivation or rationale based upon extension of range of communications is faulty and fails to provide the proper motivation to combine the reference teachings.

Further, column 6, lines 30-42 of Wood identified in the Office Action provide adjustable power of interrogator 26 so that only devices within a certain range of interrogator 26 would respond. Such teachings fail to disclose or suggest extension of range of interrogator 26 and merely provide selectivity and changing of appropriate ranges for stimulation of replies from tags within the ranges. The fact that Wood discloses adjustable power fails to provide any motivation to combine teachings of MacLellan with teachings of Wood. Further, no extension of range of communications is provided inasmuch as the signals are generated and transmitted using device 103 of MacLellan. There is no motivation to combine the reference teachings and the 103 rejection of claim 1 is improper for at least this reason.

In addition, there is no evidence that the teachings of MacLellan could in fact be combined with the teachings of Wood. What teachings of Wood and MacLellan would be deleted and which teachings would be accepted and combined to form an operable device? The Office Action and prior art fail to disclose or provide any details how one would combine teachings of MacLellan with teachings of Wood, or that if such teachings were combined, the range of communications of the resultant device would be extended. The Office Action merely provides bald, inaccurate statements and fails to provide any evidence that the references could in fact be combined or that one would be motivated to perform the combination. The obviousness rejection of claim 1 is improper for at least these additional reasons.

The claims which depend from independent claim 1 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

For example, claim 2 recites a driver amplifier configured to increase the power of the forward link communication signal and to apply the forward link communication signal to an input of the communication circuitry. Page 4 of the Office Action recites teachings in column 6, lines 30-42 of Wood indicating that the power of interrogator 26 is adjustable so that only devices within a certain range of interrogator 26 will respond. Such teachings fail to disclose or suggest the defined *driver amplifier configured to increase the power of the signal and to apply the signal to an input of the communication circuitry and a communication station remotely located with respect to the housing and configured to receive the signal (having the increased power) from the communication circuitry.*

Limitations of claim 2 are not shown or suggested in the prior art of record and claim 2 is allowable for at least this reason.

Claim 3 recites a communication station including adjustment circuitry configured to adjust an electrical characteristic of the forward link communication signal. The Office Action on page 4 identifies modulator 202 as allegedly disclosing limitations defined in claim 3. As shown in Fig. 2 of MacLellan, the information signal 200A is applied to modulator 202 which formulates the downlink signal which is communicated using transmitter 203. Accordingly, the modulator 202 of device 103 is utilized to formulate the downlink signal and antenna 204 of device 103 communicates the downlink signal. To the contrary, claim 3 recites the adjustment circuitry configured to receive the forward link communication signal and to adjust an electrical characteristic of the forward link communication signal. The adjustment circuitry recited in claim 3 adjusts an electrical characteristic of the forward link communication signal already generated using circuitry of the housing. The claimed communication station includes the adjustment circuitry and is remotely located with respect to the housing including the circuitry configured to generate the forward link communication signal while the modulator 202 of MacLellan is present within the same interrogator 103 including radio signal source 201, transmitter 203 and antenna 204. Positively recited limitations of claim 3 are not shown or suggested in the prior art of record and claim 3 is allowable for at least this reason.

Referring to claim 4, it is recited that the adjustment circuitry comprises automatic gain control circuitry. The teachings in column 11 of Freeze relate to automatic gain control electronics of an interrogator as shown in Fig. 4. The AGC electronics 206 are

provided within a fuel dispenser 200 to communicate with transponders. The AGC electronics teachings of Freeze within dispenser 200 fail to disclose or suggest the claimed communication station which is *remotely located with respect to the housing configured to generate a forward link communication signal* and includes the automatic gain control circuitry to adjust an electrical characteristic of the forward link communication signal as defined in claim 4. The combined teachings of Wood, MacLellan, and Freeze fail to disclose or suggest positively recited limitations of claim 4 and claim 4 is allowable for at least this additional reason.

In addition, there is no motivation to combine the teachings of Freeze with the teachings of Wood and MacLellan. On page 9 of the Action, it is stated that the combination is appropriate as Freeze teaches the adjustment circuitry comprises automatic gain control circuitry whereby the interrogator transmits proximity values and provides power control. The record is entirely devoid of any evidence that Wood or MacLellan are concerned with transmission of proximity values or power control. Apart from the bald, cursory statements of the Action, there is no motivation to combine the teachings of Freeze with the other references and the obviousness rejection of claim 4 is inappropriate for at least this additional reason.

Referring to claim 6, communication station of claim 1 is defined to include a power amplifier. Page 4 of the Office Action states that Wood discloses a power amplifier in Fig. 7. On page 3 of the Office Action, it is stated that Wood does not disclose a communication station. Applicants submit Wood fails to disclose or suggest a communication station including a power amplifier as defined by claim 6 in view of the

statement on page 3 of the Action stating that Wood does not disclose a communication station. Positively recited limitations of claim 6 are not shown or suggested in the prior art of record and claim 6 is allowable for at least this reason.

Claim 7 recites the communication station includes an antenna configured to receive the forward link communication signal from the power amplifier and to radiate the forward link wireless signal. On page 4 of the Action, Wood is identified as allegedly disclosing the claimed antenna. Applicants submit the rejection of claim 7 is improper in view of the clear statement on page 3 of the Action stating that Wood fails to disclose a communication station and claim 7 recites the communication station including an antenna. Claim 7 recites limitations not shown or suggested in the art and claim 7 is allowable for at least this reason.

Referring to claim 9, it is stated on page 5 of the Action that MacLellan discloses a coaxial RF cable associated with a communication station with reference to Fig. 1, LAN (102). LAN teachings fail to disclose or suggest the claimed coaxial RF cable recited in claim 9. Applicants have electronically searched MacLellan and have failed to uncover any coaxial RF cable teachings. In addition, the Office Action fails to identify any coaxial RF cable teachings in MacLellan. The generic LAN teachings of MacLellan fail to disclose or suggest the coaxial RF cable defined in claim 9 and claim 9 is allowable for at least this reason.

With reference to claim 10, it is stated in the Action that Wood discloses a plurality of transceivers referring to Fig. 7 and column 13, lines 8-33 wherein diversity switch allegedly provides a plurality of transceivers. As set forth in column 2 of Wood, Fig. 7 is

a circuit schematic of RF circuitry *included in the interrogator*. Accordingly, even if the diversity switch provides a plurality of transceivers as alleged in the Office Action, such teachings only provide such transceivers within the interrogator as specifically defined in Wood. A careful read of claim 10 recites the communication circuitry includes the plurality of *transceivers individually coupled with the housing and the communication station*. As set forth on page 3 of the Action, Wood fails to disclose a communication station and Wood also fails to disclose or suggest the plurality of transceivers coupled with one of the housing and the communication station. Claim 10 recites limitations not shown or suggested in the prior art of record and claim 10 is allowable for at least this reason.

Claim 11 recites an interrogator comprising, in part, a housing including circuitry configured to generate a forward link communication signal, communication circuitry outside of the housing, and a communication station remotely located with respect to the housing and configured to radiate a forward link wireless signal corresponding to the forward link communication signal. Accordingly, claim 11 recites generation of the forward link communication signal using circuitry of a housing and radiating a forward link wireless signal using a communication station remotely located with respect to the housing. Wood discloses switch 77 generating a signal and radiation of the signal using antennas X1, X2 in the *same interrogator device*. MacLellan also discloses interrogator 103 arranged to generate downlink signals and to radiate the downlink signals using antenna 204 of the *same device*. The prior art teachings of record fail to disclose or suggest the claimed housing including circuitry configured to generate the forward link communication signal and the communication station *remotely located with respect to the housing* and configured

to radiate a forward link wireless signal corresponding to the forward link communication signal. Positively limitations of claim 11 are not shown or suggested in the art of record and claim 11 is allowable for at least this reason.

There is no motivation to combine the reference teachings of MacLellan with the teachings of Wood. There is no evidence that an operable device would result if such teachings were combined. The combination of references cited in support of the obviousness rejection of claim 11 is improper for at least these additional reasons.

Claim 21 recites the housing including circuitry configured to generate forward link communication signals and communication stations remotely located with respect to the housing and individually configured to radiate a forward link wireless signal corresponding to a forward link communication signal. The prior art references fail to disclose or suggest the claimed housing and the remotely located communication stations. Claim 21 recites limitations not shown or suggested in the prior art of record and claim 21 is allowable for at least this reason.

There is no motivation to combine the teachings of MacLellan with the teachings of Wood and there is no evidence that the combination would provide an operable device. The obviousness rejection of claim 21 is inappropriate for at least these additional reasons.

Claim 26 recites an interrogator of a radio frequency identification system comprising, in part, a housing including circuitry configured to generate a forward link communication signal and a driver amplifier, coaxial RF cable, and a communication station *remotely located* with respect to the housing and including automatic gain control circuitry, a power amplifier, and an antenna configured to radiate a forward link wireless

signal corresponding to the forward link communication signal. The prior art of record fails to disclose or suggest the claimed circuitry of the housing, the coaxial RF cable, and the communication station remotely located with respect to the housing and including the antenna. Numerous positively recited limitations of claim 26 are not shown or suggested in the prior art of record and claim 26 is allowable for at least this reason.

There is no motivation to combine the teachings of MacLellan with the teachings of Wood and there is no evidence that the combination would provide an operable device. The obviousness rejection of claim 26 is inappropriate for at least these additional reasons.

Claim 27 recites a method comprising, in part, generating a forward link communication signal using circuitry within a housing of an interrogator, receiving the forward link communication signal within a communication station *remotely located from the housing*, and radiating a forward link wireless signal corresponding to the forward link communication signal using the communication station. MacLellan and Wood both provide generation of signals to be communicated and radiation of such generated signals within a common device. MacLellan and Wood fail to disclose or suggest the claimed generating using circuitry within a housing and radiating a forward link wireless signal using a communication station remotely located from the housing as specified in claim 27. Claim 27 recites limitations not shown or suggested in the art of record and claim 27 is allowable for at least this reason.

There is no motivation to combine the teachings of MacLellan with the teachings of Wood and there is no evidence that the combination would provide an operable device. The obviousness rejection of claim 27 is inappropriate for at least these additional reasons.

Claim 35 recites a method comprising, in part, providing an interrogator having a housing and at least one communication station *remotely located from the housing*, generating a forward link communication signal using circuitry within the housing and radiating a forward link wireless signal corresponding to the forward link communication signal using the communication station. The prior art of record including Wood and MacLellan provide generation and radiation of signals using a common device and fail to disclose or suggest limitations of claim 35. Claim 35 is allowable for at least this reason.

There is no motivation to combine the teachings of MacLellan with the teachings of Wood and there is no evidence that the combination would provide an operable device. The obviousness rejection of claim 35 is inappropriate for at least these additional reasons.

The claims which depend from independent claim 35 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

As set forth herein, numerous limitations of the pending claims are not shown or suggested in the prior art of record. In the event that a rejection of the claims is maintained with respect to the prior art, or a new rejection made, Applicants respectfully request identification in such asserted references of elements which allegedly correspond to limitations of the claims in accordance with 37 C.F.R §1.104©)(2) in a *non-final Action*. In particular, 37 C.F.R §1.104©)(2) provides that *the pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.* Further, 37 C.F.R. §1.104©)(2) states that the Examiner must cite the best references at their command. When a reference is complex or shows or describes inventions other than that claimed by

Applicants, the particular teachings relied upon must be designated as nearly as practicable. The pertinence of each reference if not apparent must be clearly explained for each rejected claim specified. Applicants respectfully request clarification of the rejections with respect to specific references and specific references teachings therein pursuant to 37 C.F.R. §1.104©)(2) in a non-final Action if any claims are not found to be allowable.

Applicants hereby add new claims 43-48.

Applicant respectfully requests allowance of all pending claims.

Applicants have amended the specification and abstract. Claim 7 has been amended to clarify the dependency.

Applicant respectfully requests allowance of all pending claims.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: 7/16/02

By: _____

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Inventor . . . . . David K. Ovard et al.
Assignee . . . . . Micron Technology, Inc.
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Examiner . . . . . M. Shimizu
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Title: "Wireless Communication Systems, Interrogators and Methods of Communicating Within a Wireless Communication System"

VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING RESPONSE TO APRIL 16, 2002 OFFICE ACTION

In the Specification

The replacement specification paragraphs incorporate the following amendments. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

The paragraph beginning at line 14 on page 1 has been amended as follows:

--One such configuration is described in U.S. Patent Application Serial Number 08/705,043, filed August 29, 1996, now U.S. Patent No. 6,130,602, issued October 10, 2000, assigned to the assignee of the present application, and incorporated herein by reference. This application discloses the use of a radio frequency (RF) communication system including communication devices. The disclosed communication devices include an interrogator and a remote transponder, such as a tag or card. Another example of a wireless communication system including a backscatter system is described in U.S. Patent No. 5,649,296 to MacLellan et al. which is also incorporated herein by reference.--.

The paragraph beginning at line 20 on page 8 has been amended as follows:

--Communication stations 120 of interrogator 26 preferably individually include receive circuitry configured to receive the return link wireless signals 29 and apply return link communication signals to interrogator housing 14 for processing as described in detail below. Further receive operations of interrogator 26 are described in a copending U.S. patent application filed the same day as the present application, having the title "Wireless Communication Systems, Interrogators and Methods of Communicating Within a Wireless Communication System", assigned to assignee hereof, having attorney docket number MI40-180, naming David Ovard and Roy Greeff as inventors, now U.S. Patent No. 6,356,764 B1, issued on March 12, 2002, and incorporated herein by reference..--.

In the Abstract

--A wireless communication system includes an interrogator including a housing including circuitry configured to generate a forward link communication signal; communication circuitry configured to communicate the forward link communication signal; and a communication station remotely located with respect to the housing and configured to receive the forward link communication signal from the communication circuitry and to radiate a forward link wireless signal corresponding to the forward link communication signal; and at least one remote communication device configured to receive the forward link wireless signal. ~~A method of communicating within a wireless communication system includes providing an interrogator and at least one remote communication device; generating a forward link communication signal using circuitry within a housing of the interrogator; communicating the forward link communication signal from the housing using~~

~~communication circuitry; receiving the forward link communication signal from the communication circuitry within a communication station of the interrogator remotely located from the housing; radiating a forward link wireless signal corresponding to the forward link communication signal using the communication station; and receiving the forward link wireless signal within the at least one remote communication device.~~--.

In the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

7. (Amended) The wireless communication system according to claim ~~1~~ 6 wherein the communication station includes an antenna configured to receive the forward link communication signal from the power amplifier and to radiate the forward link wireless signal.

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